

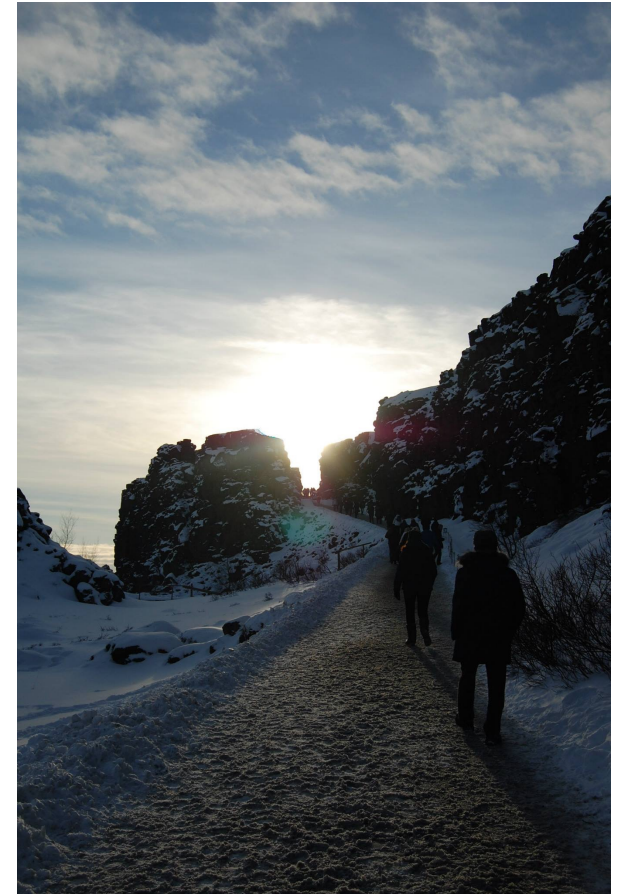
AGU Data Management Maturity (DMM)SM Program

ESIP Data Stewardship Briefing
November 16, 2015

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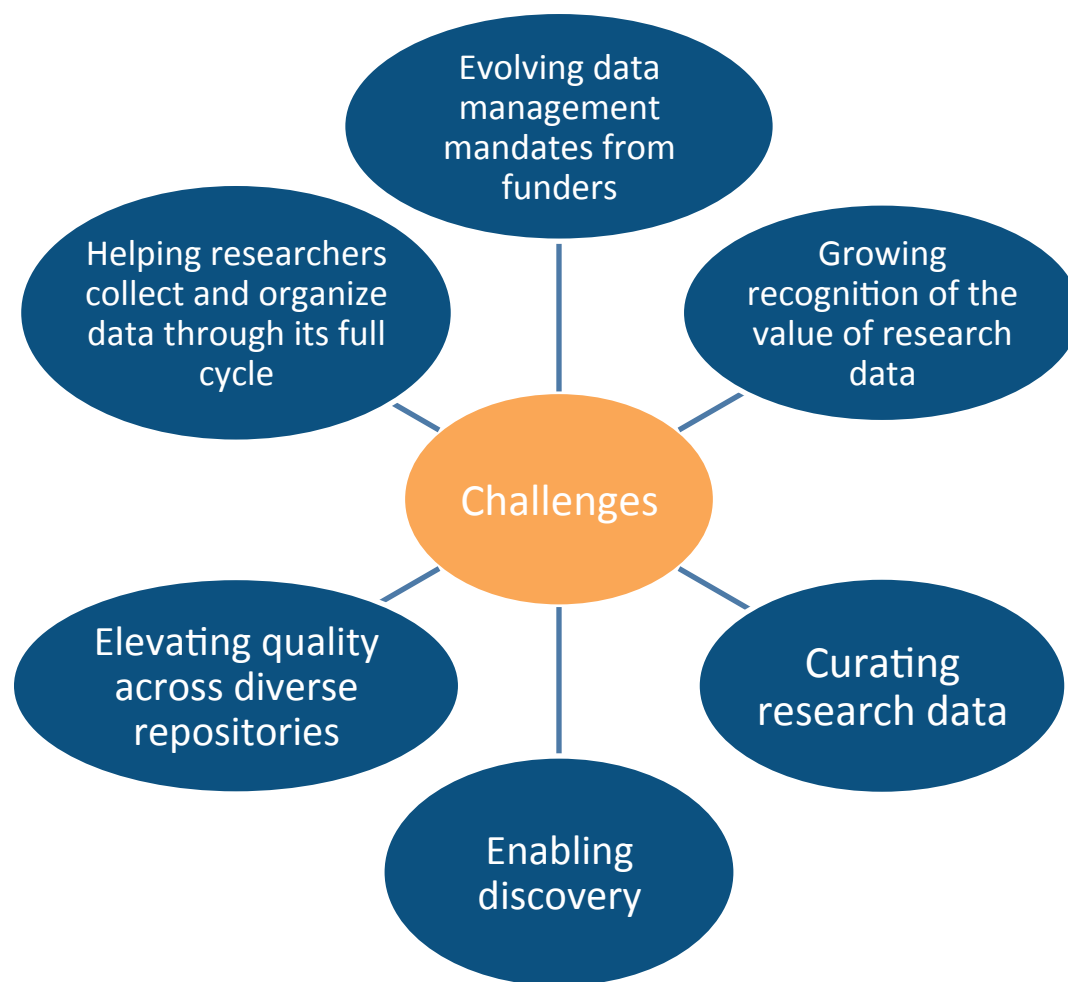
DMMSM Program at AGU

AGU's position statement
on data affirms that:
“Earth and space
data are a world
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care of such data is our
responsibility and our
obligation to future
generations.”



Thingvellir, Iceland
Jamie Liu, February 2015

DMMSM Program at AGU



AGU is partnering with the CMMI[®] Institute to adapt their Data Management Maturity (DMM)SM framework to the specific needs of the Earth and space sciences to improve data management practices in repositories and institutions.

Data Management Maturity

- Designed to improve data management practices in repositories and institutions by communicating and aligning best practices for small or large data curation efforts.
- Involves an assessment of data operations and management at a repository by experts applying a data management maturity framework.

Key User Groups

- Institutions
- Industry
- Large Data Facilities and Repositories
- Small Data Facilities and Repositories
- Research Teams/Projects
- Individual Scientists—awareness of best practices

DATA SERVICES



AGU's **position statement** on data affirms that: "Earth and space science data are a world heritage. Taking proper care of such data is our responsibility and our obligation to future generations." The rapid growth of research data, thanks to new tools, satellites, and sensors are posing challenges for researchers and repositories to meet these aspirations, which are also the basis for new mandates around data from funders and governments worldwide.

Research scientists and data repositories and institutions need to develop and hone skills to address these changes and manage critical data for future use and understanding.

Recognizing the challenges and opportunities provided by the growing importance of data in the Earth and space sciences, AGU is developing new programs to help researchers, aligned professionals, repositories, and institutions obtain and improve skills around data collection, management, and curation.

The first of these programs to be introduced is a data management assessment service. This service is designed to improve data management practices in repositories and institutions by communicating and aligning best practices for small or large data curation efforts. [LEARN MORE ►](#)

Resources

- [AGU Position Statement](#)
- [AGU Publications Data Policy](#)

DATA SERVICES CONTACTS

Data Management Maturity

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DMMSM Model Overview

US Department of Interior Twitter Feed 9/13/15: An otter party @GlacierBayNPS by Becky King #Alaska <https://twitter.com/Interior/status/643199551675977728>

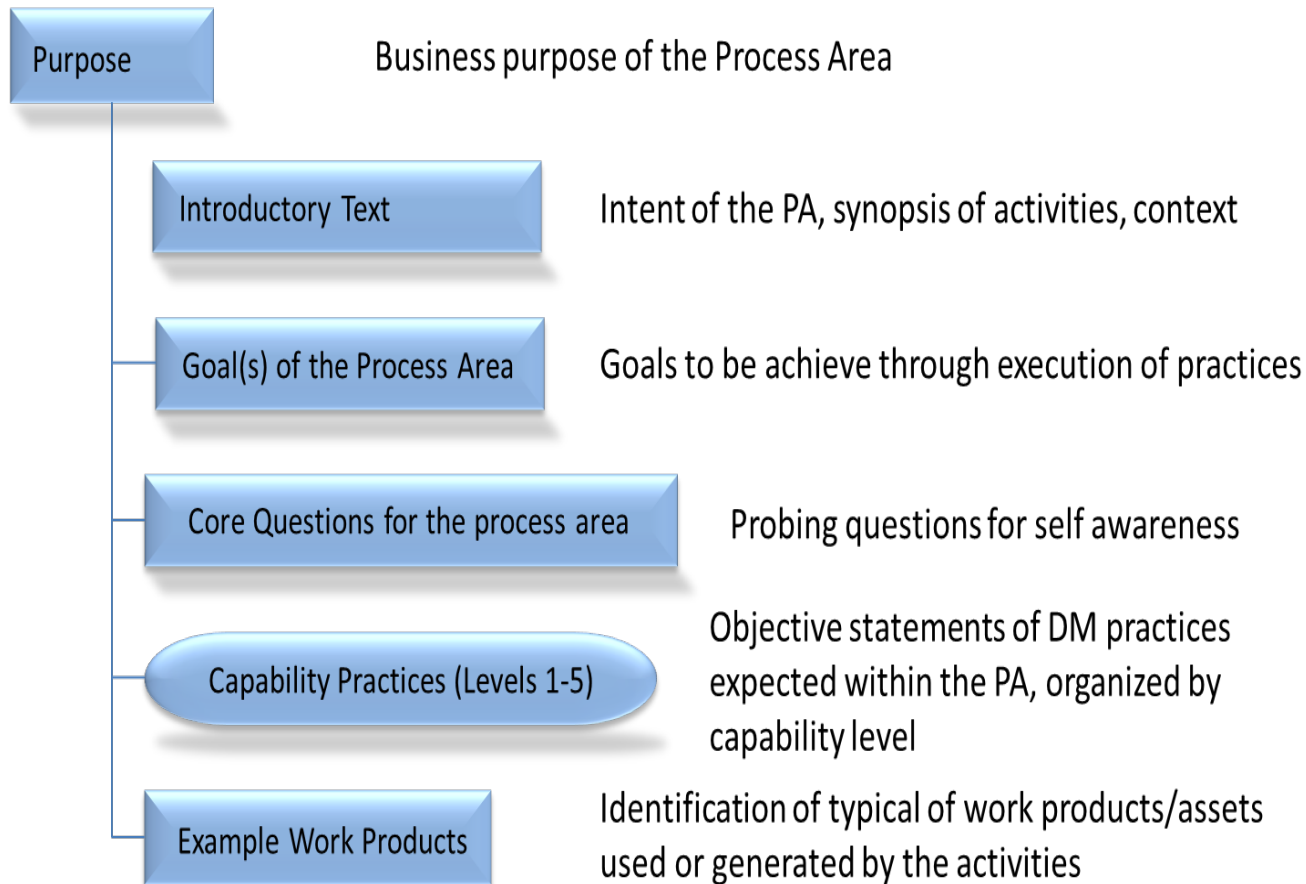
DMMSM Process Areas (25)

Category Name	Process Area Name
Data Management Strategy	Data Management Strategy
	Communications
	Data Management Function
	Business Case
	Program Funding
Data Governance	Governance Management
	Business Glossary
	Metadata Management
Data Quality	Data Quality Strategy
	Data Profiling
	Data Quality Assessment
	Data Cleansing
Data Management Operations	Data Requirements
	Data Lifecycle Management
	Provider Management
Platform and Architecture	Architectural Approach
	Architectural Standards
	Data Management Platform
	Data Integration
	Historical Data, Retention and Archiving
Supporting Processes	Measurement and Analysis
	Process Management
	Process Quality Assurance
	Risk Management
	Configuration Management



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DMMSM Process Areas Construct



Key

Explanatory Model Components

Required for Model compliance

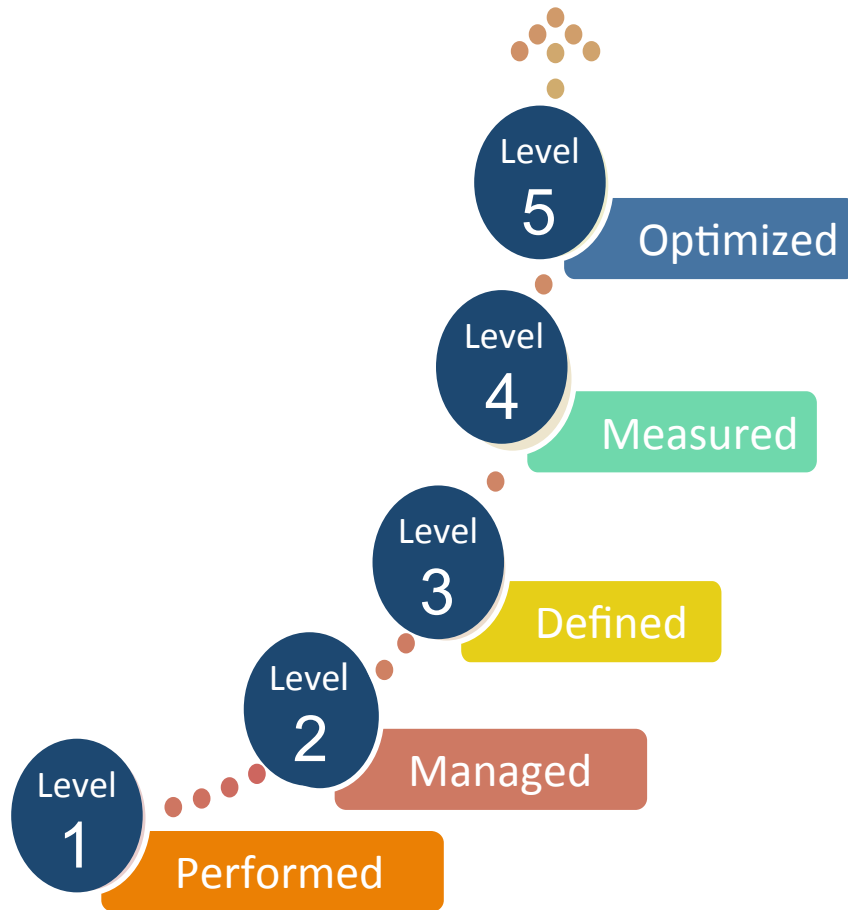


CMMI[®] Institute

DMMSM – Capability and Maturity

- **Capability** – “We can do this”
 - Specific Practices – “*We’re doing it well*”
 - Work Products – “*We’ve documented the processes we are following*” (work products, templates, guidelines, standards, etc.)
- **Maturity** – “....and we can prove it”
 - Process Stability – “*Solid as a rock*”
 - Ensures Repeatability – “*We can replicate research*”
 - Policy
 - Training
 - Quality Assurance, etc.

DMMSM Capability Levels



CMMI Institute

DMMSM Capability Levels Defined

- | | |
|--------------------|--|
| 1-Performed | Processes are performed ad hoc , primarily at the project level. |
| 2-Managed | Processes are planned and executed in accordance with policy for at least one line of business, program, or cross-cutting project. |
| 3-Defined | Set of standard processes is employed and consistently followed across the organization. |
| 4-Measured | Process metrics have been defined and are used for data management. |
| 5-Optimized | Process performance is optimized through applying Level 4 analysis for target identification of improvement opportunities. Best practices are shared with peers and industry. |

Infrastructure Support Practices

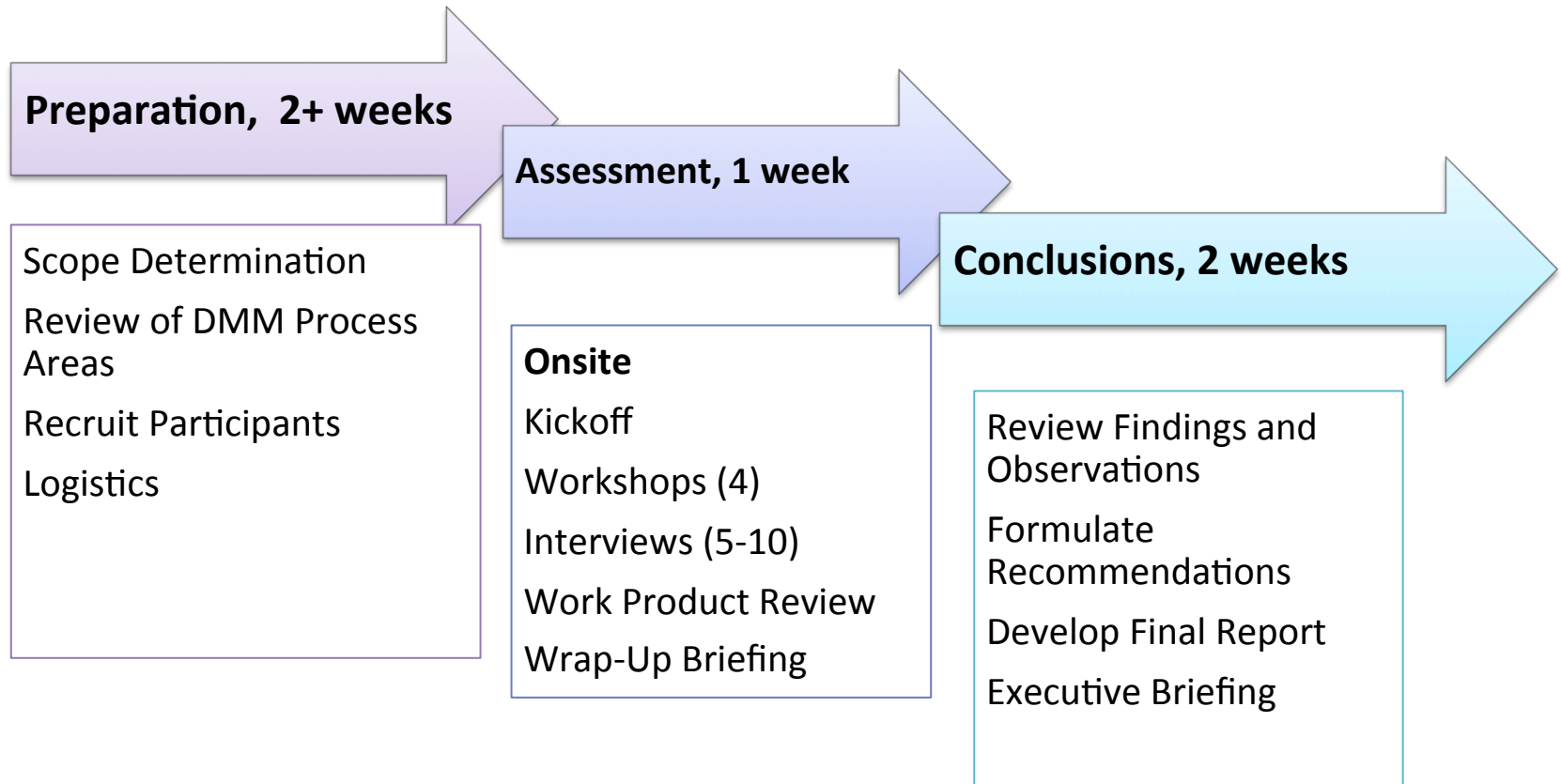
Maturity Level 2 – Implement a Managed Process

- Establish an Organizational Policy
- Plan the Process
- Provide Resources
- Assign Responsibility
- Train People
- Manage Configuration
- Identify and Involve Relevant Stakeholders
- Monitor and Control the Process
- Objectively Evaluate Adherence
- Review Status with Senior Management

Maturity Level 3 – Institutionalize Org Standards

- Establish Standards
- Provide Assets that Support the Use of the Standard Process
- Plan and Monitor the Process Using a Defined Process
- Collect Process-Related Experiences to Support Future Use

DMMSM Assessment Method



Next Steps

- Data Management Maturity assessments are available
 - Assessment Events
 - Educational Workshops
 - Support for Data Management Process Change
- Data Fair and AGU Fall Meeting



US Department of Interior Twitter Feed 9/21/15:
Guess who's excited for #SeaOtterWeek! Sea otter at
Kodiak #WildlifeRefuge in #Alaska
<https://twitter.com/Interior/status/646092444673576960>



QUESTIONS?

US Dept of Interior @Interior Nov 13

Yellow leaves & red rocks: @CapitolReefNPS is amazing! Photo by Glenn Nagel #Utah

<https://twitter.com/Interior/status/665202688330735616>